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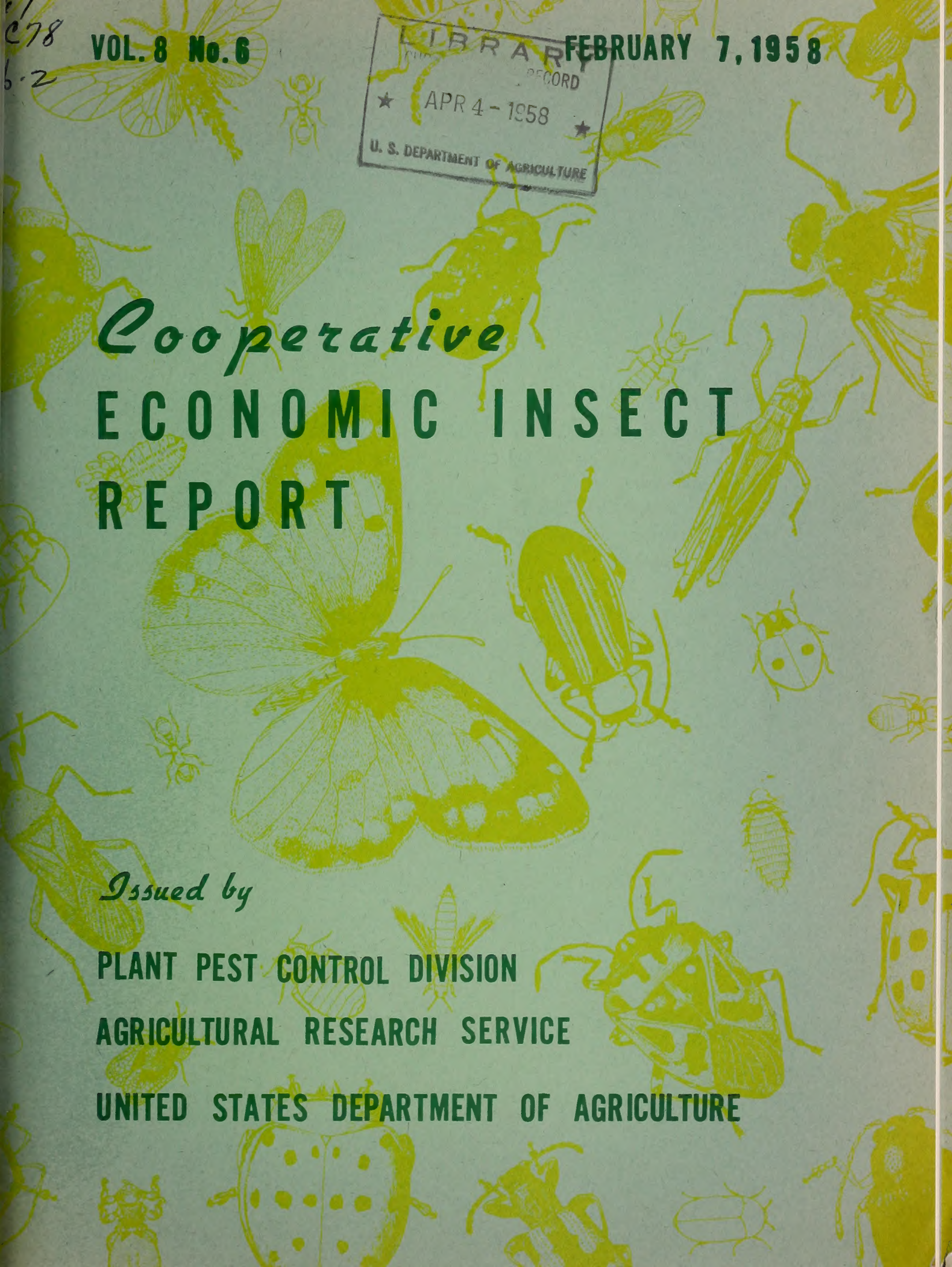

Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

Volume 8 February 7, 1958 Number 6

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

BOLL WEEVIL hibernation surveys show counts about the same as last year in Georgia but higher in Hope, Arkansas, area. (p. 89).

CATTLE GRUB populations slightly lower than last year in Arkansas. Larvae taken from child in Georgia. (p. 90).

STORED-GRAIN INSECT survey in Oklahoma. (p. 90).

Spread of SPOTTED ALFALFA APHID in the United States. (p. 92).

SUMMARY OF INSECT CONDITIONS - 1957 - Georgia (p. 93), South Carolina (p. 96), Vermont (p. 100).

INSECTS not known to occur in the United States. (p. 101).

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Reports in this issue are for the week ending January 31 unless otherwise designated.

WEATHER BUREAU 30-DAY OUTLOOK

MID-FEBRUARY TO MID-MARCH 1958

The Weather Bureau's 30-day outlook for February calls for temperatures to average above seasonal normals over the northeast quarter of the nation. Above normal temperatures are also expected in the South Atlantic States, where January was unseasonably cold. Over the southwest quarter below normal temps. are expected to prevail, except for above normal along the west coast. Near normal averages are indicated in the remainder of the country. Precipitation is predicted to exceed normal over most of the nation, except for subnormal amounts over the Southern Plains and near normal in states bordering the Gulf of Mexico.

Weather forecast given here is based on the official 30-day "Resume and Outlook", published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D. C. Price $4.80 a year, $2.40 a half year.

WEATHER OF THE WEEK ENDING FEBRUARY 3

A weekend storm system, which produced moderate to heavy snow from Missouri to Maine and was followed by freezing deep into Florida, featured the week's weather. This storm appeared over the lower Great Plains on January 31 when 4 to 10 inches of new snow fell in northeastern Missouri and from St. Louis, Mo., eastward across Illinois. It reached the Carolinas on February 1, leaving 1 to 3 inches of snow in eastern Kentucky and northeastern Tennessee, and continued northward along the Atlantic coast during the remainder of the period. More than a foot of new snow fell in the central Appalachians, 7 to 10 inches were measured in the vicinity of Atlantic City, N. J., 3 to 4 inches in the vicinities of Pittsburgh and Philadelphia, Pa., and 6 and 7 inches at Block Island, R. I., and Nantucket, Mass., respectively. Most of this snow remained on the ground at the end of the period. As a cold air mass moved in behind the storm, temperatures fell to subzero levels in the Dakotas, Minnesota, Iowa, and adjacent areas of Nebraska, Missouri, Illinois, and Wisconsin, and to subfreezing levels to southern Florida. Moisture for the week totaled one-half inch or more only in the Ohio Valley, the lower Appalachian region, along the north Atlantic coast, in northern portions of New York and New England, and in the Pacific States. Precipitation was very light in the remainder of the country. More moisture would be beneficial in the western Great Plains where some soil blowing was reported again last week, but from the lower Mississippi Valley to the Atlantic coast more dry weather is needed as soil moisture there remains excessive in many areas due to previous precipitation. Temperatures for the week averaged well below normal in the Southeast and well above elsewhere, with extreme departures ranging from 9° below normal in southern Florida to 12° above at several stations along the Canadian Border. The weather for the winter of 1957 and 1958 on the basis of temperature and precipitation has shown marked persistence. Average temperatures for both December and January have averaged well below normal in the Southeast, particularly Florida, and unusually mild elsewhere. Precipitation for both months has been generous in the Pacific States and east of the Mississippi River, and light to very light elsewhere, notably so in the western Great Plains. Major freezes in Florida this winter, prior to this morning's have occurred December 1-6, 12-13, and January 9-11, 17-19. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum)-OKLAHOMA - Scattered infestations of 50-500 per linear foot in wheat and barley in Hennessey area, Kingfisher County. A small percent were dead but apparently not parasitized. (Wood).

PEA APHID (Macrosiphum pisi)-OKLAHOMA - Nymphs beginning to appear in Stillwater area, Payne County. (Bieberdorf).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - No significant population fluctuations were noted in 292 samplings taken in the Stillwater area during the week ending January 25. (Bieberdorf). Low numbers continue throughout the State, with increasing numbers, 0-30 per plant, noted in Tillman County. (Coppock).

APHIDS - ARKANSAS - Only light infestations observed on oats. (Boyer).

FRUIT INSECTS

SAN JOSE SCALE (Aspidiotus perniciosus) - CALIFORNIA - Reported heavy on cherry at Chico, Butte County. (Cal. Coop. Rept.).

YELLOW SCALE (Aonidiella citrina) - CALIFORNIA - Reported heavy from orange in San Jose, Santa Clara County, and in Sacramento, Sacramento County. Reported light on orange in Fresno, Fresno County. (Cal. Coop. Rept.).

TRUCK CROP INSECTS

A LEAF ROLLER (Clepsis peritana) - CALIFORNIA - A heavy infestation reported damaging strawberry fruit and crowns at Glendora, Los Angeles County.

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - OKLAHOMA - Inspections of 9 lint cleaners and 2 gin stands in McCurtain, Choctaw, Bryan, Johnston and Tillman Counties, January 7-27, recovered 24 larvae, all counties being positive. (Fed.-State PBW Comm.).

BOLL WEEVIL (Anthonomus grandis) - GEORGIA - Fall examinations made of woods surface trash in 4 regions December 2-11, averaged 2,081 live weevils per acre, which is higher than the seven year average of 1,300 but about the same as a year ago when the average was 1,936 weevils. Area averages for 1957 and 1956 were northwest (Gordon County), 1,113 and 2,904; north central (Spalding and Pike Counties) 5,034 and 2,299; east central (Burke County) 1,791 and 774; and south (Tift County) 387 and 1,355. A total of 5 samples, or 90 square feet, were taken from each of 40 farms. Live weevils were found on 70 percent of the farms examined. The maximum number of weevils per acre found on a single farm was 13,552 in Spalding County. (Beckham, Morgan). ARKANSAS - Trash samples for hibernation studies were taken in two areas in November and December 1957. The McGehee area (southeast) averaged 1,786 weevils per acre for 31 samples taken. No comparison can be made as this is a new area. (Lincoln, Moore, Boyer). In the Hope area (southwest) 23 samples gave an average of 3,472 weevils per acre compared with 1,398 weevils for December 1956. (Leigh, Black).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

TURPENTINE BEETLES - ARKANSAS - Activity reported in Nevada County. (Boyer).

FULLER ROSE BEETLE (*Pantomorus godmani*) - CALIFORNIA - Larvae reported as heavy in soil at Oakland, Alameda County. (Cal. Coop. Rept.).

HOLLY LEAF MINER (*Phytomyza* sp.) - VIRGINIA - Damaging leaves of American holly trees in Gladys, Campbell County. (Morris).

YELLOW SCALE (*Aonidiella citrina*) - CALIFORNIA - Medium infestation reported from *Mahonia* in Sacramento, Sacramento County. (Cal. Coop. Rept.).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (*Hypoderma* spp.) - UTAH - Coming to backs of cattle during recent weeks, eastern Millard County. Some emergence has now occurred. (Knowlton). ARKANSAS - The annual cattle grub survey made the week of January 20 averaged 2.24 grubs per head for 474 head examined. This is slightly lower than the 2.27 average for January 1957, and much lower than the 8.48 average for January 1956. The 1958 survey included 5 counties also surveyed the previous 2 years. Low numbers of grubs in cattle in the low, wet delta section of the eastern part of the State may have been due to wet soil conditions in spring seasons. (Lancaster, Boyer). GEORGIA - Immature larvae infesting lymph node of 10 year old boy, Harris County, January 23. Det. E. E. Bennington. (CDC Ent. Mus.). OKLAHOMA - Averaged 11.4 in 29 yearling heifers, 11.3 in 21 two-year old heifers, 6.8 in 18 three-year old cows, 4.4 in four-year old cows and 1.6 in 31 nine-year old cows at Fort Reno, Canadian County, on January 23. Counts in Harper County averaged somewhat higher. (Allison).

CATTLE LICE - UTAH - Serious in several localities, Millard County. (Knowlton). MARYLAND - Infesting Hereford cattle at Darlington, Harford County. (U. Md., Ent. Dept.).

Screw-Worm Eradication in the Southeast: The U. S. Department of Agriculture, Agricultural Research Service and Animal Disease Eradication Division, in cooperation with the Florida State Livestock Sanitary Board, are releasing sterilized screw-worm flies across the State of Florida. This program, at the present time, is in a testing and training stage. (Denmark).

TROPICAL RAT MITE (*Ornithonyssus bacoti*) - TENNESSEE - Biting humans in a private home, Davidson County, January 20. Det. H. D. Pratt. (CDC Ent. Mus.).

COCKROACHES - UTAH - Seriously infesting an apartment building in Brigham City. (Knowlton).

STORED-PRODUCT INSECTS

A DERMESTID (*Perimegatoma vespulae*) - CALIFORNIA - Reported from Courtland, Sacramento County, making the seventh record for the State and the first for the county. (Cal. Coop. Rept.).

SAW-TOOTHED GRAIN BEETLE (*Oryzaephilus surinamensis*) - VIRGINIA - Found in various kinds of nut meats received from foreign countries in vacuum-sealed cans. Getting into candy in a Roanoke County business firm. (Amos, Allen).

Stored-grain Insect Survey in Oklahoma: A total of 44 samples of farm-stored grain, representing all sections of the State, were collected the week of January 9 by Oklahoma State University students in entomology. Sample size was approximately 50 cubic inches. Percent of samples infested by various insects were Cadelle larvae, 79; flat grain beetle, 77; rice weevil, 75; dermestids, 66; lesser grain borer, 66; red flour beetle, 41; saw-toothed grain beetle, 34; cowpea weevil, 29; braconid parasites, 27; psocids, 25; window pane fly larvae, 14; grain mites, 11; spider beetles, 9; Angoumois grain moth, 7; pseudoscorpions, 7; and corn sap beetle, 2. (Fenton).

MISCELLANEOUS INSECTS

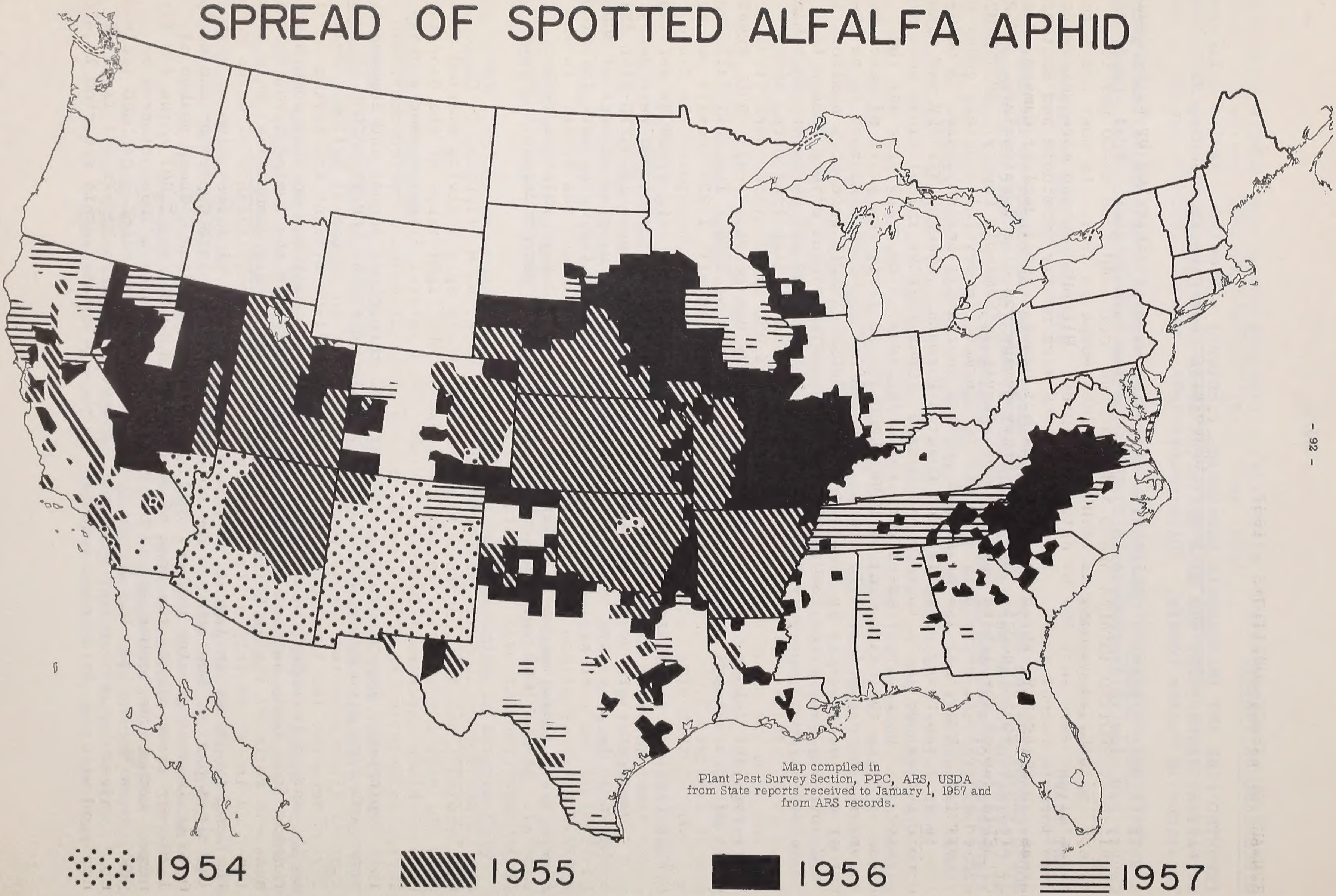
IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - FLORIDA - Adults collected at Paxton, January 20, and at 3 different areas near Liberty, January 21. Both locations in Walton County. (Dickinson).

A MITE (*Aceria ajugae*) - CALIFORNIA - Taken in several locations in Los Angeles County and also in Sacramento in light to medium infestations. (Cal. Coop. Rept.).

LIGHT TRAPS

SOUTH CAROLINA - One adult of *Peridroma margaritosa* was caught in the light trap at Charleston for the week ending February 2. (Reid). No catch at Clemson light trap for week ending January 31. (McAlister)

SPREAD OF SPOTTED ALFALFA APHID



Map compiled in
Plant Pest Survey Section, PPC, ARS, USDA
from State reports received to January 1, 1957 and
from ARS records.

SUMMARY OF INSECT CONDITIONS - 1957

GEORGIA

Reported by W. C. Johnson

Highlights: SPOTTED ALFALFA APHID infestations increased from 25-50 per 100 sweeps in 1956, to as many as 15,000 per 100 sweeps in 1957. In most areas the infestations were kept low by natural enemies. BILLBUGS caused more damage to corn than in recent years. The infestations were mostly in middle and southern areas. HESSIAN FLY, which normally does not cause a great deal of damage, was general over south Georgia, however, heavy damage was of a local nature. GRAPE COLASPIS damage was severe but local on peanuts in Seminole County. SPITTLEBUGS caused moderate to heavy damage to Coastal Bermuda in several southern counties. VELVETBEAN CATERPILLAR was a serious problem on peanuts and soybeans. A GRASSWORM (Mocis sp.) was heavy on millet and Coastal Bermuda. SORGHUM WEBWORM was widespread but caused light to moderate damage. CORN EARWORM infestations were much lighter than usual, with sweet corn suffering most. The peach crop was the cleanest, from the standpoint of PLUM CURCULIO, in forty-one years of peach work by veteran entomologist O. I. Snapp. The PEACH TREE BORER continues to be the number one peach insect in the State. Most APPLE INSECTS were more numerous in 1957 than any year since 1950. MEXICAN BEAN BEETLE caused severe damage to velvetbeans, bunch and pole beans. TOBACCO BUDWORM was not as severe on tobacco as in 1956. Infestations were light to heavy, and in many instances, were carried from the plant bed to the field. STINK BUG infestations were light to heavy over the tobacco area, however, most heavy damage was local. BOLL WEEVIL infestation was heavy and approximated infestation of 1956. The 1957 fall trash counts averaged 2,081 live weevils per acre compared with 1,936 weevils per acre in 1956. SPIDER MITE infestations were generally heavy throughout the State. COTTON LEAFWORM infestations were heavy, but beneficial. ELM SPANWORM defoliated large areas of hardwood in northern regions. BAGWORM infestations were heavy and widespread over the State, mostly infesting arborvitae. IMPORTED FIRE ANT is known to be infesting thirty-four counties with an infested acreage of 400,000. In 1956, it was generally agreed that approximately 75,000 acres were infested. SCREW-WORM infestations were heavy on livestock throughout the State. In the Athens area, there was an infestation as early as mid-May, which is rather unusual. ALMOND MOTH infestations in stored peanuts were moderate to heavy. FLEAS were abundant over the State.

Cereal and Forage Insects: (Reported by E. W. Beck, H. H. Tippins, C. C. Blickenstaff, and W. C. Johnson.) GRASSWORM (Mocis sp.) activity started about July 20, with a rapid rise in adult numbers in the light traps at the Georgia Coastal Plain Experiment Station, Tifton. This initial flight caused a heavy larval infestation in millet on Experiment Station grounds, which continued into September. Heavy moth flights continued throughout August and September, with peak flight on September 30. The fall brood of the LUPINE MAGGOT (Hylemya lupini) first appeared the latter part of October on lupine at Tifton. Peak egg laying occurred the first part of November, with intermittent egg laying continuing to the end of December, causing overlapping of generations, so that some maggots, ranging from newly hatched to fully grown, occurred in the lupine throughout the season. Moths of the VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) were first taken in the light trap collections in late July. Heavy flights of moths occurred the last two weeks in August, followed by a heavy larval infestation on soybeans the first part of September. The moths reappeared in late September and early October in even greater numbers in light trap collections. These peaked at 1,761 for three nights the week of September 14 to 20, and 2,001 moths for three nights between September 28 and October 4. Heavy infestations occurred on peanuts, with considerable damage to late maturing varieties. BILLBUG (Calendra sp.) infestations were heavy on corn, however, the acreage was not large as compared with the total corn acreage. Forty-six county agents reported 16,476 acres infested, and 38 county agents reported no damage to their knowledge. The total corn acreage in 1957 was 2,738,000 acres. HESSIAN FLY (Phytophaga destructor) infestations were light to heavy, most heavy damage not widespread. A SPITTLEBUG (Tomaspis bicincta) caused some heavy damage to Coastal Bermuda. SUGARCANE BEETLE (Euetheola rugiceps) caused extensive damage to several fields in Tift County during April and early May. Two fields were observed in which the plant stand was completely destroyed. Heavy but local infestation of GRAPE COLASPIS (Colaspis sp.) on peanuts in Seminole County. Infestations of CHINCH BUGS (Blissus leucopterus and B. l. insularis) on St. Augustine grass were heavy and numerous. FALL ARMYWORM (Laphygma frugiperda) infestations were lighter on corn but moderate to heavy on millet, grain sorghum and small grain. MEXICAN BEAN BEETLE (Epilachna varivestis) caused moderate to heavy damage to velvetbeans. CABBAGE LOOPER (Trichoplusia ni) infestations were heavy on peanuts and soybeans. RED-NECKED PEANUTWORM (Stegasta basqueella) infestations were moderate to heavy. The SORGHUM WEBWORM (Celama sorghiella) was abundant and caused light to moderate damage to sorghum heads. CORN EARWORM (Heliothis zea) caused an average weight loss of 3.9 percent to field corn, as determined by a survey of 98 fields in two areas in south Georgia. This is thought to be less damage than occurred during any of the three previous years. RICE WEEVIL (Sitophilus oryza) in the same fields averaged 27.8 percent of the ears infested in September. LESSER CORNSTALK BORER (Elasmopalpus lignosellus) was much less destructive in 1957 than in 1956, on soybeans and peanuts.

Fruit and Nut Insects: (Reported by Oliver Snapp, M. R. Osburn, Jack Taylor and W. C. Johnson.) PLUM CURCULIO (Conotrachelus nenuphar) infestation was generally very light in 1957 and very much less than that of an average year. The 1957 peach crop was perhaps the cleanest on record. Only two cases of curculio "wormy" peaches were reported during the season. The hibernating adult population in the Peach Belt in the winter of 1957-58 is very light. PEACH TREE BORER (Sanninoidea exitiosa) continues to be the number one peach problem in the State. Infestation is very heavy in some orchards in Fort Valley, and much damage to the trees has been caused by the insect. The increased infestation is believed to be due largely to the use of and dependence on trunk sprays, which are less effective than fumigant-type treatments in heavily infested orchards, in latitudes where the insect has a long oviposition period. A female moth was observed in a commercial peach orchard at Fort Valley, April 25, 1957. This is the earliest record of borer emergence in Georgia, and reveals the long egg-laying period of the insect in this locality, as female moths usually begin to deposit eggs on the day they emerge. Eggs have been known to hatch as late as December 9, at Fort Valley. The LESSER PEACH TREE BORER (Synanthedon pictipes) infestation continues heavy in a number of orchards, especially where there are winter-injured trees and in neglected orchards. The SHOT-HOLE BORER (Scolytus rugulosus) infestation continues heavy in devitalized, weak or diseased trees and in neglected peach orchards. SUCKING BUGS (coreids and stink bugs) - Stink bugs and other catfacing insects were not as abundant in 1957 as in 1956. The general SAN JOSE SCALE (Aspidiotus perniciosus) infestation in 1957 was heavier than usual. ORIENTAL FRUIT MOTH (Grapholitha molesta) infestation was very light at Fort Valley in 1957. FULLER ROSE BEETLES (Pantomorus godmani) were jarred from peach trees as early as February 7. SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) adults appeared on peach trees as early as February 7. FALL WEBWORM (Hyphantria cunea) infestation on pecan trees was heavier than that of an average season. The first nests of the season were observed on pecan trees on June 10, which was unusually early and may have been an indication of a heavy infestation by early fall. Heavy infestations of the FALL WEBWORM and the WALNUT CATERPILLAR (Datana integerrima) were common throughout the State. The HICKORY SHUCKWORM (Laspeyresia caryana) continued to be important where there was a nut crop. Generally, the PECAN WEEVIL (Curculio caryae) was not as serious as in the past. The PECAN NUT CASEBEARER (Acrobasis caryae) was more prevalent in south Georgia than usual.

Other insects and mites which sometimes attack pecan were not of especial importance during 1957.

Truck Crop Insects: (Reported by C. M. Beckham, Jack Taylor, Loy Morgan and W. C. Johnson.) MEXICAN BEAN BEETLE (Epilachna varivestis) infestations were heavy on bunch, lima and pole beans, as well as crowder and field peas. This was the heaviest infestation of this pest in several years. VEGETABLE WEEVIL (Listroderes costirostris obliquus) infestations were heavy on crucifers over the State, with one heavy infestation being reported on onions. LESSER CORNSTALK BORER (Elasmopalpus lignosellus) infestations on field peas were moderate. COWPEA CURCULIO (Chalcodermus aeneus) infestations were heavy on field peas. LEAF-FOOTED BUG (Leptoglossus phyllopus) infestations were moderate to heavy on tomato and pimiento pepper. CABBAGE APHID (Brevicoryne brassicae) infestations were moderate to heavy on cabbage, however, damage was not great. SOUTHERN GREEN BUG (Nezara viridula) and BROWN STINK BUG (Euschistus servus) were light to moderate on tomato, whereas a year ago they caused serious losses to farmers. TOMATO HORNWORM (Protoparce sp.) infestations on tomatoes were light. TOMATO FRUITWORM (Heliothis zea) infestations on tomatoes were light. CORN EARWORM was a problem on untreated sweet corn. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) infestations were moderate to heavy on tomatoes and potatoes.

Cotton Insects: BOLL WEEVIL (Anthonomus grandis) infestations were heavy throughout the State. It was not uncommon to find fields with 85 percent punctured squares even before migration began. The fall, 1956, trash examinations averaged 1,936 weevils per acre, compared with 2,081 per acre in 1957. There were 1,036, or 54 percent, of the 1,936 weevils per acre to survive the winter. COTTON APHID (Aphis gossypii) infestations were moderate to heavy and generally heavier than in 1956. SPIDER MITES (Tetranychus spp.) were a problem on most cotton fields. Infestations were mostly moderate to heavy. THRIPS (Frankliniella sp.) infestation were light to moderate. BOLLWORM (Heliothis zea) was moderate to heavy. There were two distinct periods when infestations were heavy, which were at squaring and late season. CABBAGE LOOPER (Trichoplusia ni) infestations were light to heavy with most infestations light. PALE STRIPED FLEA BEETLE (Systena blanda) infestations were light. COTTON LEAFWORM (Alabama argillacea) infestations were heavy, however, the insects came at a time when they were beneficial in defoliating the cotton. The three most injurious insects of cotton, in their importance are boll weevil, bollworm and spider mites, although aphids are very nearly equal to mites in importance.

Forest and Ornamental Insects: (Reported by Gerald Smith, Dorsey Dyer and Staff, and W. C. Johnson.) BLACK TURPENTINE BEETLE (Dendroctonus terebrans) infestations were moderate to heavy but seem to be declining. PINE ENGRAVER (Ips pini) was locally heavy. NANTUCKET PINE MOTH (Rhyacionia frustrana) infestations were heavy and appear to be getting more serious each year. ELM SPANWORM (Ennomos subsignarius) was a serious pest of hardwood in north Georgia. RED-HEADED PINE SAWFLY (Neodiprion lecontei) infestations were scattered and generally light. BAGWORM (Thyridopteryx ephemeraeformis) infestations were heavy, particularly on arborvitae. SPIDER MITE infestations were heavy in nurseries. EASTERN TENT CATERPILLAR (Malacosoma americanum) infestations were heavy on wild cherry. FALL WEBWORM (Hyphantria cunea) infestations were heavy on pecan, walnut and persimmon. Some pecan trees in southern regions were completely wrapped up with webs.

Insects Affecting Man and Animals: IMPORTED FIRE ANT (Solenopsis saevissima v. richteri) is presently known to be infesting thirty-four counties with approximately 400,000 acres involved. The 1956 infested acreage was approximately 75,000 acres. The DOG FLEA (Ctenocephalides canis) and CAT FLEA (C. felis) infestations were moderate to heavy over the State. SCREW-WORM (Callitroga hominivorax) infestations were general over the State, with many heavy infestations. There were infestations of screw-worm in the Athens area as early as mid-May. It is thought that the adult flies overwintered in Georgia as far north as McRae, Telfair County.

Beneficial Insects: (Reported by W. E. Neville and W. C. Johnson.) Bees went into the winter period in average to good condition, in most sections of the State. Some feeding was necessary in southern areas, due to excessive rains during the fall honey flow which prevented bees storing the usual amount of honey for winter use. Weather conditions were ideal for honey plant development during the fall of 1957, which should make 1958 a good honey year, with normal weather conditions. Honey production was above average in 1957. The estimated average colony yield was twenty-eight pounds, compared with thirty pounds in 1956. The number of colonies of bees in 1957 was 217,000, which was an increase of 10,000 colonies over the previous year. Very little damage to colonies from insecticides was reported in 1957. The disease situation was about the same as in 1956. Less than one percent of the colonies inspected showed foulbrood infection.

SUMMARY OF INSECT CONDITIONS - 1957

SOUTH CAROLINA

Prepared by W. C. Nettles, et al.*

CEREAL AND FORAGE CROPS INSECTS

Soybeans - The soybean crop sustained the heaviest damage in the history of its growth in South Carolina. Several of the insects which were involved are as follows: VELVETBEAN CATERPILLARS (Anticarsia gemmatalis) were the most important. They appeared at about the same date but in greater numbers. The adults probably having been blown in by Hurricane Audrey from the subtropics. MEXICAN BEAN BEETLE (Epilachna varivestis) was more serious on soybeans than ever before. Infestations appeared to originate principally on spring planted snapbeans from which they migrated to soybeans in late June. The warm winter doubtless enabled a large survival and a wetter than normal spring was favorable for the buildup on beans. CABBAGE LOOPER (Trichoplusia ni), in early August, appeared to build-up appreciably on soybeans and posed much more of a threat than finally proved to be the case. STINK BUGS appeared to be more numerous, especially in the upper Pee Dee areas, but any serious damage was extremely localized. BLISTER BEETLES (Epicauta spp.) caused considerable ragging of leaves. BANDED CUCUMBER BEETLE (Diabrotica balteata) was noted damaging soybeans as far inland as Bamberg County. LESSER CORNSTALK BORER (Elasmopalpus lignosellus) damage was definitely lower than that of previous years and was extremely slight. CORN EARWORMS (Heliothis zea) were present in fairly large numbers on untreated beans. State-wide damage was slight because of the widespread application of insecticides. Lupines - LUPINE MAGGOTS and LUPINE WEEVILS caused localized damage to this plant which is grown in a limited area of the State. Alfalfa - SPOTTED ALFALFA APHID (Therioaphis maculata) has been found to be generally present over the State. So far its damage has not been extremely serious. During the drought in early August, several spots involving several acres of alfalfa were noted as having been damaged by this aphid. ALFALFA WEEVIL (Hypera postica) was first noted in South Carolina, especially in the northern part of the State, having moved in from North Carolina. Severe damage was oberved in Florence, Lancaster, Fairfield and York Counties. Very slight infestation occurred in Newberry County and this was attributed to the control obtained from granular insecticides. Clover - CLOVER HEAD WEEVILS reduced yield of crimson clover for seed production. Several growers have applied insecticides with apparently desired results. Grain sorghum - LESSER CORNSTALK BORER (Elasmopalpus lignosellus)caused damage that was definitely below that of previous years and was extremely slight. Wheat - The HESSIAN FLY (Phytophaga destructor) caused many farmers to report a virtual failure or extremely reduced yields. In the upper Piedmont areas it caused considerable lodging and severe yield reduction. The buildup was doubltless due to the large amount of volunteer grain and the extremely warm winter. A detailed survey would have shown this loss to have run into thousands of dollars. Oats - APPLE GRAIN APHID (Rhopalosiphum fitchii) and other APHIDS were numerous both during the fall of 1956 and 1957. Early planted grain for grazing was more severely infested. Agriculturists regard this species and others as important. Grasses - Coastal Bermuda had more serious damage by insects than ever reported. Plants were considered to be "insect free". Three insects were involved as follows: (1) A SPITTLEBUG (Tomaspis bicincta) was found in all parts of the State. Some fields were turned completely brown in July, August, and September. This appeared to be correlated with the lack of grazing or mowing and a higher than normal rainfall. With an estimated one-half million acres of Coastal Bermuda this problem can become extremely serious. Damage, so far, has been localized though in several instances it has covered 5 to 10 acres with an estimated loss of $100.00 per acre. (2) GREEN JUNE BEETLE (Cotinis nitida) larvae caused spotted localized damage, especially to Bermuda grass. It was noted on the more fertile soils which are high in organic matter. (3) MARCH FLIES (Philea sp.) were extremely numerous in soil and apparently damaging Coastal Bermuda grass. These were found in soils extremely high in organic matter. A GRASSWORM (Mocis latipes) which is usually damaging in only a few counties adjacent to the Georgia line near the Atlantic Ocean, was a problem even in counties adjacent to the North Carolina line in the coastal area. In addition to damaging Bermuda grass it caused damage to crabgrass. ARMYWORM (Pseudaletia unipuncta) and FALL ARMYWORM (Laphygma frugiperda) appeared at about the normal time, according to the light traps operated by research workers at Florence, Charleston, and Clemson. The armyworms were also present in light trap collections in appreciable numbers. Damage by these insects to forage crops and corn was extremely low. Over a period of years the YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) has been noted in appreciable numbers in light trap collection, but has not been damaging to crops. SAND WIREWORM (Horistonotus uhlerii) caused extremely minor damage.

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* V. M. Kirk, J. H. Cochran, T. E. Skelton, N. Allen, W. J. Reid, L. M. Sparks, R. L. Walker, C. A. Thomas, J. A. Berly, L. H. Senn, T. R. Adkins, J. K. Reed, E. W. King, and F. McAlister

TOBACCO INSECTS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) was the most important insect pest of tobacco during the season. Most of the damage occurred on newly set plants; however, some severe infestations of full-grown tobacco plants were reported in several localities of the State. BROWN STINK BUG (Euschistus servus) and SOUTHERN GREEN STINK BUG (Nezara viridula) were unusually abundant during June. Infestations were more widespread, more severe, and caused more grower concern than in past years. A soil sifting survey was conducted in Florence, Dillon, Marion, and Horry Counties during November and December of 1956 for the TOBACCO WIREWORM (Conoderus vespertinus) with 167 prospective 1957 tobacco fields being examined, of which 117, or 70 percent, were found to be infested. Damage was about normal with severe injury occurring in some localities. TOBACCO BUDWORM (Heliothis virescens) infestation was less than in 1956 which was one of highest on record. Larvae of the CORN EARWORM (Heliothis zea) were associated with the tobacco budworm in last season injury. TOBACCO HORNWORM (Protoparce sp.) was less troublesome than in past years, probably due to the widespread use of more effective insecticides. GRASSHOPPERS are always a problem on newly set plants. There was a general infestation early in the season, but insecticides gave effective control. VEGETABLE WEEVIL (Listroderes costirostris obliquus) caused some injury in plant beds and a few widely scattered infestations of field plants, but the infestation was less than during the past few years. Pests of Less Importance: GREEN PEACH APHID (Myzus persicae), POTATO TUBERWORM (Gnorimoschema operculella), CABBAGE LOOPER (Trichoplusia ni), MIDGE LARVAE, and SNAILS were below normal in abundance.

TRUCK CROP INSECTS

A SOUTHERN POTATO WIREWORM (*Conoderus falli*) caused extensive and serious damage to Irish potatoes in untreated and in some insecticide-treated fields in commercial plantings in Charleston County, during May and June. Populations of the insect in 17 plantings under observation ranged from averaged of 9 larvae per square foot (6 inches deep) during midwinter, to 6 in March and April, 5 in early May, and 2 in late May and early June. Very few other species of wireworms or other soil insects were noted in these fields. CABBAGE LOOPER (*Trichoplusia ni*) was present throughout year and extensively damaged cole crops in coastal areas when not controlled. Populations were highest during April and May and during September and October, averaging between 2 and 3 larvae per plant in untreated areas. This species and IMPORTED CABBAGEWORM (*Pieris rapae*) were chiefly responsible for about 75 percent of the untreated plants being ineligible to U. S. Grade 1. CABBAGE APHID (*Brevicoryne brassicae*) was light to moderate, with occasional heavily infested plants occurring in most commercial early spring plantings of cabbage in coastal areas. MEXICAN BEAN BEETLE (*Epilachna varivestis*) was moderately abundant on spring-crop beans in coastal regions. Unusually high populations developed on snap beans, pole beans, and soybeans during late summer, caused serious defoliation in many fields, and transferred to young fall-crop snap beans during early fall. Damage to snap beans was severe in some cases. PICKLEWORM (*Diaphania nitidalis*) seriously damaged unprotected fall cucumbers and other cucurbits in coastal counties. Few uninfested fruits were produced in untreated fields. CORN EARWORM (*Heliothis zea*) was moderately destructive to tomatoes, and sweet corn during late sping and early summer and to cole crops, tomatoes, and snap beans during late summer and fall in the coastal plains. Light to moderate populations of *Myzus persicae*, *M. solani*, and *Macrosiphum solanifolii* were present on most commercial early-crop potatoes in coastal farms. FALL ARMYWORM (*Laphygma frugiperda*) infestations were light to moderate and occurred on fall plantings of cole crops and snap beans. A light infestation of TOBACCO HORNWORM (*Protoparce sp.*) occurred on fall tomatoes and eggplant. LEAF MINERS (*Liromyza sp.*) were sufficiently abundant in some plantings of cucurbits to warrant control measures.

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) infestations were generally higher than those of 1956 and heavier damage was inflicted on the crop in coastal South Carolina. Rainy weather during the first of the season caused an increased number of weevils. BOLLWORMS (*Heliothis spp.*) were not a problem this year. THRIPS and APHID populations were light throughout the coastal section and were not a problem this year. COTTON LEAFWORM (*Alabama argillacea*) defoliated approximately 95 percent of the cotton in the coastal area in August and September. Its presence was actually beneficial in reducing boll rots and allowing cotton to dry more rapidly so that picking could be done.

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

FALL WEBWORM (*Hyphantria cunea*) was especially damaging to pecan, persimmon and other plants, especially in the coastal area. A NOTODONTID (*Cerura multiscripta*) on hybrid poplar was extremely serious. A LEAFHOPPER (*Alebra albostriella*) was damaging to oaks and caused defoliation during late May. PINE BEETLES caused damage in many locations, especially during construction. Forest entomologists reported serious outbreak of pine beetles in forest and outbreaks of WEBWORMS and REPRODUCTIVE WEEVILS. BORERS in oaks caused many complaints. PIGEON HORNTAILS damaged elm in York County. CARPENTERWORM (*Prionoxystus robiniae*) damage to pecan was localized but extremely serious. FULLER ROSE BEETLE (*Pantomorus godmani*) reported moderately serious in several parts of State on ornamental plants. LILAC BORER (*Podosesia s. syringae*) caused serious damage to Persian lilac. BORERS in dogwoods caused numerous complaints from various parts of the State. TEA SCALE has been reported as causing serious damage to camellias in all parts of State. MIMOSA WEBWORM (*Homadaula albizziae*) damaged locust and mimosa. RASPBERRY CANE BORERS (*Oberea bimaculata*) damaged roses locally. EVERGREEN BAGWORMS were locally abundant and damaging in many localities.

LAWN INSECTS

SOD WEBWORMS were abundant in Richland and Allendale Counties and are suspected as being damaging to Bermuda grass pasture around Clemson. GREEN JUNE BEETLES (*Cotinis nitida*) were reported damaging lawns throughout the State. A SPITTLEBUG (*Tomaspis bicincta*) was numerous on centipede grass lawns in coastal areas. Same spittlebugs were reported as extremely numerous on American hollies. MARCH FLIES (*Philea* sp.) were damaging to centipede grass in Aiken County in early June.

INSECTS AFFECTING MAN AND ANIMALS

Infestations of the HOUSE FLY (*Musca domestica*) were generally light with heavy populations reported in local areas where sanitation was poor. MOSQUITO infestations were normal for the season. BROWN DOG TICK (*Rhipicephalus sanguineus*) was particularly troublesome in houses in some areas. Control was difficult. EYE GNAT (*Hippelates* spp.) populations were heavy in the sand hill and coastal plain area and started earlier than usual. COMMON CATTLE GRUB (*Hypoderma lineatum*) was reported in backs of cattle earlier than usual; twenty percent infestation of brood cows in Saluda County on November 15, 1957. SHEEP BOT FLY (*Oestrus ovis*) was heavy in nasal passages of sheep in Laurens County. CATTLE LICE infestations were less than normal for the year. Populations of HORSE FLIES and DEER FLIES were below normal for the season. AMERICAN DOG TICK (*Dermacentor variabilis*) was abundant on dogs in Clemson area during the spring. FLEAS on dogs were troublesome. SCREW-WORM (*Callitroga hominivorax*) abundant in all areas of the State. First authentic record reported on May 16 in Lancaster County. Majority of cases reported later in season were the SECONDARY SCREW-WORM (*C. macellaria*). Populations of HORN FLY (*Siphona irritans*) and STABLE FLY (*Stomoxys calcitrans*) were normal for the season.

BENEFICIAL INSECTS

Apanteles congregatus was unusually abundant and parasitized a high percentage of the hornworm larvae that appeared during the latter part of the growing season. SCOLIIDS were reported frequently over lawns and pastures. They have doubtless exerted considerable control. They were not noted where extreme white grub damage occurred. Among the species are *Scolia dubia* and *Campsomeris plumipes fossulana*. GROUND BEETLES were numerous at the time of small grain harvest and also during the fall of the year. SPOTTED ALFALFA APHID (*Therioaphis maculata*) has failed to develop, thus far, and there were no extremely damaging infestation. Doubtless insect enemies have some bearing on the situation but entomogenous fungi have been isolated this season and are unquestionably important. VELVETBEAN CATERPILLARS (*Anticarsia gemmatalis*) on soybeans were very effectively checked by a fungus. The fungus was identified by C. G. Thompson as *Spicaria rileyi*.

STORED-PRODUCT INSECTS

RICE WEEVILS have been the most important insects in corn. The damage in some areas may have been appreciably abundant. There has been a marked reduction with the coming of the new hybrid varieties. Rice weevil infestations are certainly far lower than they were during the previous decade. Field harvest and storage in metal bins give a new opportunity for control. Fumigation of farm and elevator stored wheat and barley has been effective in the control of the RICE WEEVIL (*Sitophilus oryza*) and is important in holding the general population down. Oats have been least damaged in storage of all grains. BRANBUGS (*Oryzaephilus surinamensis* and *Tribolium castaneum* mainly) have been the most numerous insects in stored oats. ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) has been quite generally present though damage has been minor. The INDIAN-MEAL MOTH (*Plodia interpunctella*) was noted in several granaries. An unidentified insect, probably the larva of the INDIAN-MEAL MOTH has been damaging to red pepper. Dried red pepper is an important crop in the Florence area.

MISCELLANEOUS INSECTS

BLOODSUCKING CONENOSE (*Triatoma sanguisuga*) has caused several complaints from the Cherokee-Union area. FUNGUS GNATS (*Sciara* sp.) appeared in September. Although they do not do any harm they were annoying and in some instances were numerous enough to cause overheating of cars by collecting in radiators. JAPANESE BEETLES (*Popillia japonica*) spread as far south and as far west as Rocky Bottom which is in Pickens County in the mountain area.

SUMMARY OF INSECT CONDITIONS - 1957

VERMONT

Prepared by John W. Scott

The over-all insect conditions in Vermont during the year 1957 were light or moderate, there being no unusual damage as a result of extremely heavy insect infestation.

Forage Insects: Numerous GRASSHOPPERS (*Melanoplus femur-rubrum* and *M. differentialis*) caused some damage to trefoil, alfalfa and grasses. SWEETCLOVER WEEVIL (*Sitona cylindricollis*) was found in alfalfa

Fruit Insects: EUROPEAN RED MITE (*Panonychus ulmi*) was heavy in orchards. APPLE MAGGOT (*Rhagoletis pomonella*) was serious in some orchards. CYCLAMEN MITE (*Steneotarsonemus pallidus*) occurred in additional strawberry plantings.

Forest, Ornamental and Shade Tree Insects: TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) was heavy on some ornamentals. GYPSY MOTH (*Porthetria dispar*) was at lowest level since late 40's. There were few scattered infestations and slight buildup in some areas. Suppressed by severe winter temperatures which came with little snow on the ground. Defoliation survey recorded only 225 acres of noticeable defoliation due to this pest. PINE LEAF APHID (*Pineus pinifoliae*) made a strong early appearance generally as evidenced by numerous red spruce galls, however, heavy flights from galls did not materialize, and populations on white pine were below expected level in most areas. Northeastern Vermont was moderately infested with some tip chlorosis and droop apparent in scattered localities. MAPLE LEAF CUTTER (*Paraclemensia acerifoliella*), rapidly gaining reputation as a major sugar orchard pest, was again abundant in adult stage last spring. Early heavy activity declined, however, due to late frost or drought and expected defoliation did not occur until too late to be considered of significance. RED TURPENTINE BEETLE (*Dendroctonus valens*) was reported in Vermont for first time. Light infestations were found in red pine thinnings at three locations in Orange, Rutland and Bennington Counties. BALSAM WOOLLY APHID (*Chermes piceae*) infestations continue to gather impetus in Green Mountain section of central and southern Vermont causing considerable mortality of the host. Activity was limited in northern part of the State by extreme temperatures of preceding winter. BALSAM GALL MIDGE (*Itonida balsamicola*) caused light to moderate defoliation of young balsam fir and Christmas tree stock throughout Essex County and at scattered locations in Orleans and Washington Counties.

Man and Animal Pests: The MOSQUITO population of the spring flood-water species was low as a result of unusually dry spring weather. Seasonal annoyance varied on the lighter side compared with past experience.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

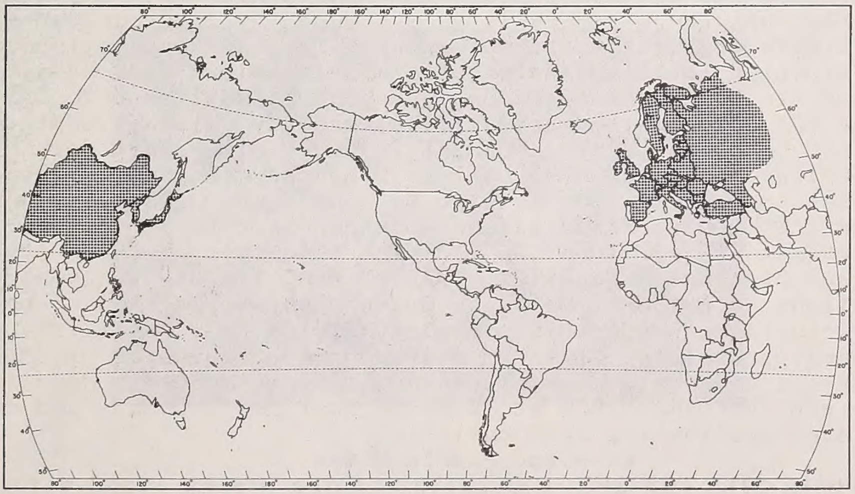
LACKEY MOTH (Malacosoma neustria L.)

Economic Importance: Lackey moth is injurious to fruit and forest trees and woody ornamentals in many areas of Europe and in parts of China and Japan. Together with brown-tail moth, it defoliated 10,000 acres of forest in Czechoslovakia in 1936. There are outbreaks at intervals in orchards in the British Isles which result in defoliation and subsequent loss of crops. The insect is chiefly an orchard pest in France but nurseries and trees are also attacked. Serious defoliation of fruit and broad-leaved trees occurs some years in parts of USSR, Bulgaria and Poland. In the Bari, Italy, area infestations are troublesome in almond plantings.

A Colony of Lackey Moth Larvae

Distribution: Distribution includes Austria, Bulgaria, China, Czechoslovakia, Denmark, Finland, France, Germany, British Isles, Holland, Italy, Japan, Korea, Poland, Rumania, USSR (European part), Spain, Sweden, Switzerland, Turkey, Yugoslavia.

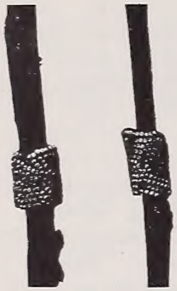
Hosts: Feeds on many deciduous fruit and forest trees including almond, apple, pear, plum, peach, cherry, oak, willow, elms, maple and beech. Roses, cotoneaster and other ornamentals are also attacked.


General Distribution of Lackey Moth

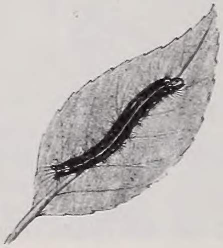
Life History and Habits: Moths emerge in July and August. They are active at night. Eggs are deposited in bands around small branches or twigs, from 100-250 eggs per mass. Overwintering occurs in the egg stage. Larvae hatch in late April and May, spin webs and feed gregariously on nearby foliage. As development proceeds, they spin larger tents from which they migrate over the tree, feeding voraciously. Migration to nearby trees sometimes occurs. Pupation takes place in loose cocoons on branches, between leaves and in dry debris. In Italy, larval and pupal stages last 38-47 days and 12-22 days, respectively.

Description: Adult expanse - male 25 to 30 mm., female 35 to 40 mm. Body, antennae, legs and forewings generally yellow-ochre or reddish-brown. Forewing has large transverse dark colored band. Hindwing lighter colored with a transverse band also lighter than that of forewing. Cocoons yellowish, pupa brownish. Larva is brilliantly colored. Head grayish-blue, whitish mediodorsal line, grayish-blue longitudinal bands on sides. The prothoracic and eighth abdominal segments have two small dark warts dorsally. Ventrally, the larva is bluish or dirty yellow. Hairs brown, more numerous on sides. (Prepared in Plant Pest Survey Section in cooperation with other ARS agencies.) CEIR 8 (6) 2-7-58

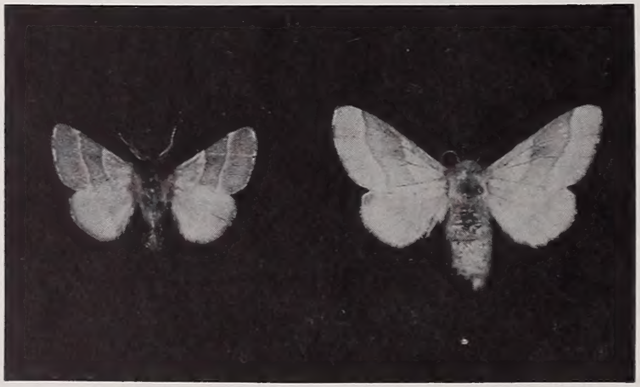
Lackey Moth (*Malacosoma neustria*)



Egg Bands



Larva



Male and Female Moths

Figures (except map): Egg bands and larva from Theobald, F. V. 1909. The Insect and other Allied Pests of Orchard, Bush and Hothouse Fruits. 550 pp. Wye, England. Larvae and tent from Palmer, R. and Westell, W. P. 1922. Pests of the Garden and Orchard, Farm and Forest. 413 pp. London. Adult-USDA photograph.